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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/716,704	11/20/2000	Eran Inbar	12808.10US01	6791

23552 7590 08/13/2003

MERCHANT & GOULD PC
P.O. BOX 2903
MINNEAPOLIS, MN 55402-0903

EXAMINER

SOUW, BERNARD E

ART UNIT	PAPER NUMBER
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2881

DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/716,704

Applicant(s)

INBAR, ERAN

Examiner

Bernard E Souw

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44, 46 and 47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-37 is/are allowed.
- 6) ☒ Claim(s) 38-44, 46 and 47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☒ Interview Summary (PTO-413) Paper No(s). 7.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Amendment

1. The Amendment A, filed on 07/25/2003, Paper No.6/A, in response to the first Office Action mailed 01/03/2003 has been entered. The present Office Action is made with all the suggested amendments being fully considered.

Claim 45 has been cancelled and no new claim has been added.

Accordingly, claims 1-44 and 45-47 are pending in this Office Action.

2. The new Title for the invention proposed in Amendment A (Paper no. 6/A) is approved by the Examiner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 38-44 and 46-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood (USPAT # 5,939,726) in view of Thompson (USPAT # 4,430,597) and Northrup et al. (USPAT # 6,099,148).

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► Regarding claims 38 and 47, Wood discloses an infrared emitter 4 as shown in Fig. 1A, 2A and 2B, comprising:

- (a) a reflective base 5, as recited in Col.3/II.29-31;
- (b) two conductive poles 2, emerging from the reflective base 5 and electrically insulated from the reflective base 5, as recited in Col.3/II.26-32, whereby the specific limitation of the 2 poles being electrically insulated is trivial, since otherwise the two would be electrically short-circuited, thereby losing the capability of conducting electrical current and generating heat;
- (c) a high emissivity wire 4, electrically connected between the two poles 4, emitting IR radiation when conducting electrical current provided through the conductive poles 4, as disclosed in Col.3/II.34-44; and
- (d) a housing consisting of cap 8 and window 7 shown in Fig.1B, as recited in Col.3/II.43-47; wherein
- (e) the reflective base 5 includes a reflective surface in the form of a parabolic reflector, as specifically recited in Col.3/II.29-30.

However, Wood's high emissivity wire 4 is not in the form of a helix. Thompson discloses a high emissivity wire that takes the form of a helix, as shown by numeral 37 in Fig.3 and Fig.5, recited in Col.8/II.25-28. Similarly, Northrup et al. also discloses a high emissivity wire that takes the form of a helix, as shown by numeral 122 in Figs.1, 2, 3 and by numeral 312 in Fig.7, as recited in Col.8/II.2-8.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form Wood's high emissivity wire in the shape of a helix having

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either one (as in claim 38) or a plurality of windings (as in claim 47), since the high total length of a helix renders a high total electrical resistance, so the conversion of electrical energy into heat can be more efficient.

It would have been also obvious to one of ordinary skill in the art at the time the invention was made to form Wood's high emissivity wire in the shape of a helix since to choose a helix form amongst many other possible forms is a mere matter of design choice, which is unpatentable, for involving only routine skill in the art.

► Regarding claim 39, Wood's housing consists of cap 8 and window 7 shown in Fig.1B, as recited in Col.3/ll.43-47.

► Regarding claim 40, Wood's high emissivity wire is made of NiCr metal, as specified in Col.3/ll.34-45, whereby NiCr wire is known in the art as being a filament wire due to its high electrical as well as high temperature resistance, rendering it highly efficient in converting electrical energy into heat.

► Regarding claims 41-44 and 46, Wood's emissivity wire has a diameter that corresponds to an electrical resistance of about the same range as those recited in the claims. The method to calculate the electrical resistance based on the wire's diameter, length and specific resistance of the wire material, is well known to one of ordinary skill in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form Wood's emissivity wire in the shape of a filament wire of specific dimensions, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Generally, differences in (wire) dimensions will not support the patentability of subject matter encompassed by the prior art, unless there is evidence indicating such dimensions are critical.

Response to Applicant's Arguments

4. Applicant's arguments filed 07/25/2003 (paper no. 6/A) have been fully considered but they are not all persuasive. The following is the Examiner's response to Applicant's arguments.

5. Regarding claims 22-36 and 38-47, which are previously rejected under § 103(a) for being obvious over Walleston (USPAT 5,225,828) in view of Wood (USPAT # 5,939,726), Applicant's argument that Wood's thermal emitter cannot substitute Walleston's LED is not persuasive, since the test for obviousness in a § 103 rejection is not whether the features of a secondary reference (Wood's thermal emitter) may be bodily incorporated into the structure of the primary reference, i.e., as a pure substitute for Walleston's LED (whereby appropriate steps are legitimate insofar as these are conventional and well-known to one of ordinary skill in the art); nor is it that the claimed

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invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In this regard, claims 22, 29 and 31 are allowed not because of the recitation of a helix in the claims, but for their dependency, either direct or indirect, on the amended claim 14, which is now allowed.

Therefore, amended claim 38, now reciting the limitation of a helix previously recited only in claims 29 and 31, remain rejected for the same reasons previously applied, but now taking the secondary references of Thompson (US # 4,430,597) and Northrup et al. (USPAT # 6,099,148) as previously applied to claims 29 and 31.

6. Independent claim 38 has been amended by introducing a new limitation of a helix, previously recited in claims 29, 31 and 47. Whereas Applicant's argument (Paper No.6/A, page 16) against the rejection of claim 22 is based on Wood's thermal emitter substituting Walleston's LED referring to claim 14, this argument is not applicable to claim 38, simply because in claim 38 there is no Walleston's LED to be substituted. Therefore, claim 38 (amended), also claims 39-44, 46 and 47 dependent thereof, are now rejected under § 103(a) for being obvious over Wood in view of Thompson and Northrup et al..

Final Rejection

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7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office Action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

ALLOWANCE

8. Claims 1-37 are allowed.

Reasons for Allowance

9. The following is an examiner's statement of reasons for allowance:

Claims 1, 8 and 14 are allowed for reciting the limitation of thermal radiation that is generated by applying a pulse sequence to the emitter, thereby heating it up to a temperature respective of the emission wavelength, which is neither anticipated nor rendered obvious by any prior art.

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Claims 2-7, 9-13 and 15-37 are also allowed because of their dependencies, either directly or indirectly, upon claim 1, 8 or 14.


10. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard E Souw whose telephone number is 703 305 0149. The examiner can normally be reached on Monday thru Friday, 9:00 am to 5:00 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R Lee can be reached on 703 308 4116. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9318 for regular communications and 703 872 9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.

bes
July 31, 2003


JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2000